

UNITED STATES PATENT OFFICE

2,463,149

ENDOTRACHEAL INTUBATING STYLET

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Application November 24, 1947, Serial No. 787,664

2 Claims. (Cl. 128—349)

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The present invention relates to a stylet adapted for use with an endotracheal tube or catheter to facilitate insertion of the latter into the trachea.

As endotracheal tubes or catheters are usually made of soft flexible rubber or the like, it is very difficult to direct the same between the vocal chords. In order to effectively overcome this difficulty, I provide an improved stylet adapted to be inserted in the tube to stiffen it and to anteriorly curve and distend its distal end into a laterally flattened cross sectional form substantially resembling the shape of the laryngeal opening. When the tube is thus conditioned, intubation may be accomplished with facility and speed.

To facilitate manipulation of the device during intubation and to fix the tube in proper relation to the stylet regardless of the length of the tube, the stylet includes a relatively long stiff wire or rod having an elongated handle slidably adjustable on its proximal portion. The distal end of the handle is reduced to make a close sliding fit within the proximal end of the tube or within the usual coupling member which may be provided on the proximal end of the tube for use in connecting it to the control valve of apparatus used to supply oxygen or other gas to the lungs through the inserted tube. The distal portion of the wire or rod is gradually curved anteriorly and is composed of forwardly diverging spring arms adapted to distend antero-posteriorly and flatten laterally the corresponding portion of the tube.

The exact nature of the present invention will become apparent from the following description when considered in connection with the accompanying drawings, in which:

Figure 1 is side elevational view, partly broken away, of a stylet constructed in accordance with the present invention.

Figure 2 is a central longitudinal section, partly broken away, of the stylet of Figure 1 operatively associated with an endotracheal tube or catheter.

Figure 3 is a transverse section taken on line 3—3 of Figure 2.

Figure 4 is a transverse section taken on line 4—4 of Figure 2.

The present stylet is adapted for use in connection with a conventional endotracheal tube or catheter 5 which has a port 6 through the distal end thereof, and which is shown as provided at its proximal end with the usual coupling member 7 for use in connecting the tube or catheter to the control valve of apparatus commonly used to supply oxygen or other gas to the lungs

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through the tube when the latter is inserted into the trachea. This tube or catheter is made of soft flexible rubber or the like, so that without a stylet it is difficult to direct the same between the vocal chords.

In order to facilitate insertion of the tube or catheter, I have provided an improved stylet which includes a relatively long stiff wire or rod 8, the major portion of which is straight, and the remaining distal portion 9 of which is gradually curved anteriorly. The rod 8 is somewhat longer than the longest type of endotracheal tube, and the distal end portion thereof is composed of a pair of forwardly diverging spring arms 10 having inturned free forward ends 11. The arms 10 are normally tensioned to spring apart in such relation that they will flatten the distal portion of the tube 5 when disposed within the same as shown in Figure 2, thereby giving this portion of the tube a cross sectional form substantially resembling the shape of the laryngeal opening. The stylet further includes an elongated handle 12 having an axial bore 13 through which the rod 8 slidably extends. Thus, the handle 12 is slidably adjustable on the proximal portion of the rod 8, and it is provided with a set screw 14 which may be tightened into engagement with the rod 8 to secure the handle in adjusted position. As seen in Figure 4, the rod 8 is flattened at one side so that when it is impinged by the set screw 14, relative rotation of the rod 8 and handle 12 is prevented. It will be seen that the distal end of handle 12 is reduced to provide a cylindrical portion 15 adapted to make a close sliding fit within the coupling member 7 and thereby effectively connect the proximal end of the tube with the handle so that they will not freely turn relative to each other. The reduced end portion 15 is provided with a tapered extension 16 which gradually reduces in diameter forwardly and acts to guide the coupling member 7 or the end of a tube not provided with such a coupling, onto the reduced end portion 15.

In using the present stylet, the parts thereof are lubricated to facilitate insertion of the same into the tube 5. Such insertion is carried out so that the distal ends 11 of the arms 10 are located a slight distance inwardly of the open distal end of the tube 5 as shown in Figure 2. The handle 12 is then slid forwardly on rod 8 so as to enter the reduced portion 15 of the handle within the coupling 7 as shown. The set screw 14 is then tightened so as to secure the handle in this properly adjusted position, and it will be apparent that the